FERM

ANDREW CEBULKA PRESSES DOWN ON SHREDDED CABBAGE TO MAKE SAUERKRAUT.

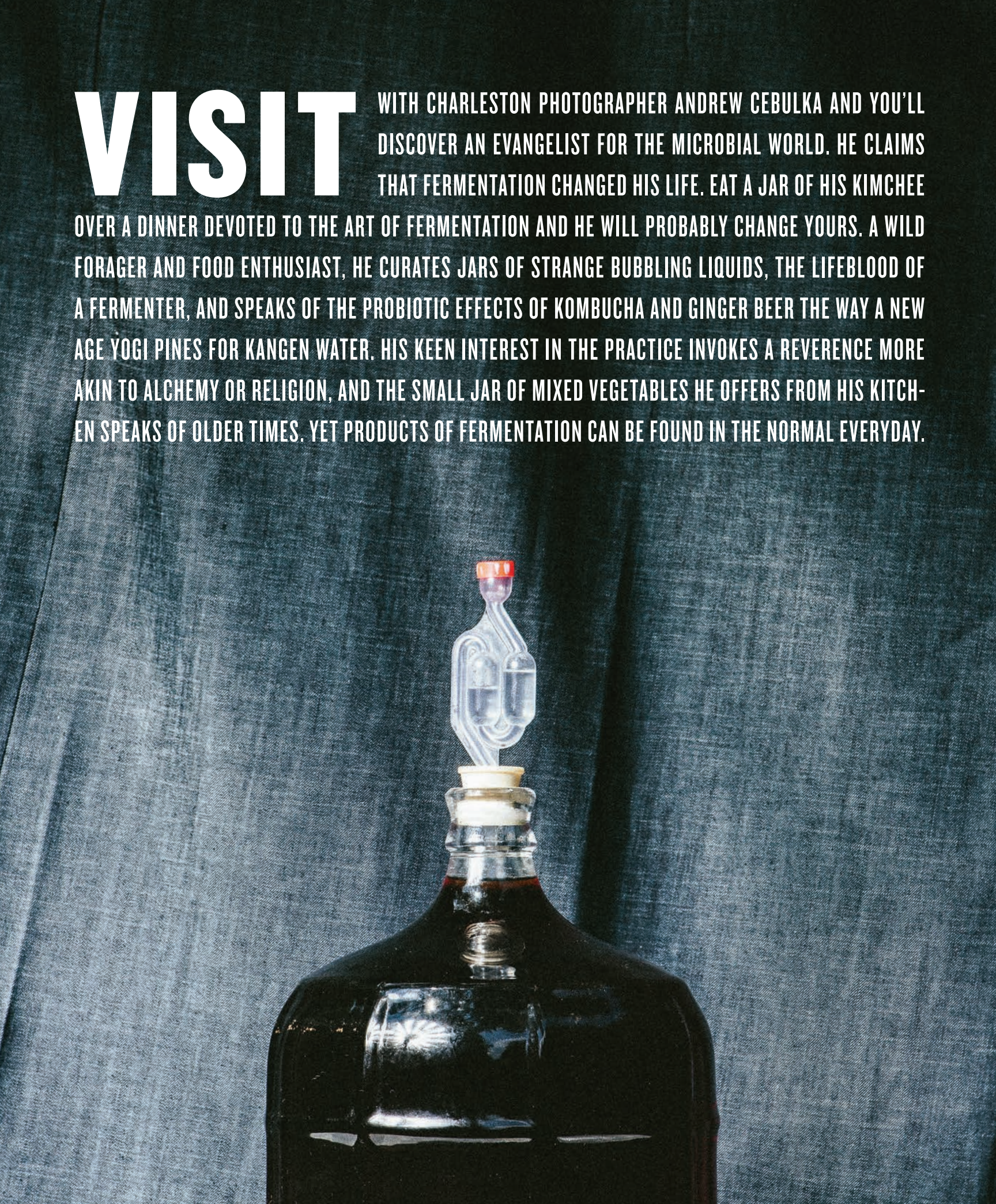
BELIEF

THE INVISIBLE POWER OF FERMENTATION

BY JEFF ALLEN
PHOTOS BY ANDREW CEBULKA

VISIT

WITH CHARLESTON PHOTOGRAPHER ANDREW CEBULKA AND YOU'LL DISCOVER AN EVANGELIST FOR THE MICROBIAL WORLD. HE CLAIMS THAT FERMENTATION CHANGED HIS LIFE. EAT A JAR OF HIS KIMCHEE OVER A DINNER DEVOTED TO THE ART OF FERMENTATION AND HE WILL PROBABLY CHANGE YOURS. A WILD FORAGER AND FOOD ENTHUSIAST, HE CURATES JARS OF STRANGE BUBBLING LIQUIDS, THE LIFEBLOOD OF A FERMENTER, AND SPEAKS OF THE PROBIOTIC EFFECTS OF KOMBUCHA AND GINGER BEER THE WAY A NEW AGE YOGI PINES FOR KANGEN WATER. HIS KEEN INTEREST IN THE PRACTICE INVOKES A REVERENCE MORE AKIN TO ALCHEMY OR RELIGION, AND THE SMALL JAR OF MIXED VEGETABLES HE OFFERS FROM HIS KITCHEN SPEAKS OF OLDER TIMES. YET PRODUCTS OF FERMENTATION CAN BE FOUND IN THE NORMAL EVERYDAY.



THE VARIOUS VEGGIES THAT GO INTO CEBULKA'S CSA-CHI; **OPPOSITE:** CEBULKA'S FERMENTING HONEY MEAD, BOTTLED ON THE SUMMER SOLSTICE, TO BE CRACKED ON THE WINTER SOLSTICE.

Consider the shelves of the typical American grocery: yogurts, cheeses, breads, bacon, pickles, hot sauces, wines, beer, even tofu and miso soup owe their flavor to the actions of yeasts, molds, and bacteria. We can't eat without them; they live within us and help to digest our food. And in a world where our cupboards are armed to the hilt with antibacterial agents, we can't hope to get away from them; there are 40 million of the microscopic critters in a typical gram of soil. Bacteria, yeast, and molds (the tiny organisms at the heart of all fermented products) are so old and integral to the human condition that it's difficult to determine where their role in our physiology stops and "we" begin. We evolve together, and that relationship leads to a wonderful spectrum of gustatory benefits.

Sandor Katz's comprehensive tome *The Art of Fermentation* defines the process as "the transformative action of microorganisms," and more specifically "anaerobic metabolism, the production of energy without oxygen." But for kitchen mavens, the process of fermentation means bread rising, beer brewing, cabbage turning to kraut, and dilly beans in a Sunday morning Bloody Mary. A mystery lies in the jar, a miracle conceived of nature's process.

Want to make pickles? It doesn't require a fancy laboratory. The yeasts involved are already squirming around on your chosen vegetable. Choose a nonreactive container (a plastic tub is fine), add the vegetables (cucumbers being an old standard, if not the best choice in the hotter months of the South—they go mushy at higher temperatures), pitch in a little kosher or pickling salt (a good handful will do), add a plate to push the vegetables below the brine, and store in a cool, dark place for a few weeks. They're ready when they taste like pickles.

This age-old method applies to many vegetables—green beans, squash, green tomatoes, cabbage, and even fruit can be stored for long periods of time without refrigeration. It was the advent of refrigeration and reliance on commercial pasteurization that led to the decline of fermenting in home kitchens. In times past, the manipulation of microorganisms helped families stretch the bounty of the grow-


CABBAGE
SAUERKRAUT
1


2


3


4


5


GINGER
BEER
1


2


3


4


5


6


7

ing season into leaner times. A little salt in the crock inhibits many bacteriological agents that might cause harm, allowing the beneficial lactic bacteria to predominate. Keeping the vegetables below the surface of the brine eliminates the intrusion of organisms dependent on the presence of oxygen. The resulting microclimate incubates a preservative effect on the food, the lactobacillus converting sugars to lactic acid and producing a taste that any pickle aficionado will recognize with ease. From tradition comes flavor.

Similar methods inform many of the food practices that home cooks have abandoned or left to others. Sausages and cured meats get their distinctive twang from the same sort of lactobacillus communities that make hot pickled okra. The fermentation of sugars by yeasts gives us wine, beer, and mead. Leaving the alcohol exposed to oxygen and another set of microbes will turn it into vinegar. Some people even pickle their compost before spreading in the garden using a Korean method called bokashi.

In Cebulka's kitchen, the bounty of the Lowcountry is transformed seasonally. Onion flowers that emerge as his scallions go to seed are picked before opening, dunked in brine, and fermented into capers. Honey from a local producer becomes mead, a beverage older than beer or wine. Old wine gets plunked into a vat covered with a thick "mother," the biotic arbiter of the vinegar formed beneath. But perhaps most creative is the CSA-chi, an amalgamation of all things strange and wonderful that come in his regular farm-fresh basket from Ambrose Farm's community supported agriculture program.

"I hear people say all the time that they get strange vegetables in a CSA or too much of one thing to really deal with," Cebulka explains. So he went back to what our forefathers might have done when dealing with an abundance of fresh vegetables. He preserved them. Based on prior experiments making sauerkraut and a bit of research into Korean cultures, he started a slightly spicier vat. "Anytime I get something in the CSA that I can't use quickly enough or is in too small an amount to really be useful at dinnertime, it goes into the CSA crock." What comes out, I found, are little jars of goodness that Cebulka offers to friends. Inside they teem with the kind of old-fashioned taste lost from industrial food. They make one want to join the movement, to rediscover food itself with just a ceramic pot, some water, and a handful of salt. They make us want to return to what is real and natural.

My friend Ted Lee, of the Lee Bros. boiled peanut empire, likes to tell a story about delivering a ham to a genteel Southern lady, wrapped in butcher paper and placed carefully in the trunk of her car. After a few weeks, she calls him regretfully to report that the ham "spoiled," being covered in mold, and she has thrown it out with the morning's garbage. Being a true Southern gentleman, he never tells her that's exactly the way a fine aged ham looks, just like an old world sausage. But the ham lovers in the room always groan ruefully.

Andrew Cebulka's small jar of his kimchee holds the key to preservation—both within the microbial communities he nurtures and the fervor with which he evangelizes. His isn't a message for mass media. He needs no public relations management. The stars of his story are invisible to the naked eye yet as old as life itself. They're immutably local, heirlooms that never knew they were endangered. One jar could change a life, or at least that what Andrew Cebulka is hoping for when he hands one over.

GINGER BEER FERMENTION IN ACTION.
OPPOSITE: STEP BY STEP IMAGES OF CEBULKA'S PROCESSES, RECIPES FOLLOW NEXT PAGE.

MICROBIAL RECIPES

BY ANDREW CEBULKA

CABBAGE SAUERKRAUT

1 green cabbage (2½ pounds)
3 tablespoons grey salt or kosher salt

1. Pull off outer leaves of cabbage. Rinse, quarter, and remove core.
2. Grind the grey salt coarsely with a mortar and pestle. If kosher salt, no need to grind. Do NOT use iodized salt.
3. Sterilize ferment vessel (I use a dishwasher, or you can just wash it thoroughly with soap and really hot water).
4. Shred cabbage into strips with a mandolin (I use a Benriner mandolin and highly recommend). DO NOT bruise/handle the cabbage too much or it will lose crispness.
5. Place handful of shredded cabbage in vessel. Sprinkle in salt and press down with knuckles. Repeat.
6. Weigh down cabbage with a sterilized glass or jar that fits into ferment vessel and press down until liquid is released. (I weigh down glass or jar with a thick weight like a rock or cutting board so I do not have to stand around putting pressure on glass.)
7. Make sure shredded cabbage is fully underneath "brine" (the liquid leaching from the pressurized cabbage and salt).
8. Cover with a towel and use a rubber band to keep it in place (make sure glass or jar stays on top of cabbage to keep it submerged during ferment).
9. Ferment for at least five days. It will start getting tangy in 1-2 weeks. You should taste it along the way, and refrigerate it when it gets to your liking. The sauerkraut gets more sour the longer the ferment goes. I prefer 3-6 weeks.

GINGER BEER

3 gallons water
2 pounds ginger
2 cups organic sugar
Ginger beer bug starter (recipe below)
Zest of 1 tangerine
5 stalks lemongrass, roughly chopped to 2-inch pieces
1 ripe pineapple, juiced

1. Fill a 5-gallon beer bucket with 3 gallons water when you start the ginger bug (recipe below). Let it sit out (covered with a kitchen towel) to allow it to dechlorinate.
2. Juice the ginger and add to dechlorinated water along with the sugar.
3. Add ginger bug starter.
4. Add tangerine zest and fronds/stalks of lemongrass.
5. To make the beer sweeter (and less like kombucha) add juice of one ripe pineapple for a better balance of flavor.
6. Using a long-handled plastic or wooden spoon, whip in a clockwise then counterclockwise fashion at least 4 and ideally 8 times per day.
7. Around Day 3 "beer" will be fermenting (bubbles will rise, and a lightly bubbling sound will occur when you listen closely).

The ambient temperature is ideal at 72–75 degrees… the hotter it is, the quicker it ferments.

8. Taste from Day 2 until you find it "right." I usually wait until Day 5 or 6 to drink it. Before you drink it, you'll want to bottle it. Use a plastic screw-top bottle (a cheap alternative to close-hitched glass bottles, and less dangerous should the bottle explode). To avoid an explosion, fill no more than 1 inch from the top, or the pressure can build too much. Let sit on counter for about 24-36 hours until bottle is firm to the touch. The beer should be effervescent. Refrigerate and drink it cold. It will keep in the refrigerator for a while, but it will lose vibrancy, so drink up.

GINGER BEER BUG STARTER

¼ cup sugar
1 cup water, left on counter for at least 24 hours
2 ounces organic ginger

1. Put sugar in a sterilized vessel. Pour in water that has been left out on counter for at least 24 hours (this dechlorinates it).

2. Finely dice ginger on a clean surface. (Organic ginger works best. Conventional ginger works but takes longer and the flavor is not as good.)

3. Use a wooden skewer to "whip" or agitate the ginger-water-sugar mixture.

4. Leave the top of the vessel open and covered with a cloth. Agitate a couple of times a day until little bubbles form on top. If you listen to the "bug," you can hear it bubbling. It's usually ready in 2–4 days.

CSA-CHI

CHI

2 large turnips cut into French-fry-sized matchsticks [same size as McDonald's fries]
4 large carrots, cut into strips and coins
2 medium kohlrabi, diced in chunks
9 small radishes, cut in half then cut into slices
¼ pound green beans, tips removed
3 medium Asian pears, diced small to medium
8 green onions, cut into 1-inch pieces (both green and white parts)
2 pounds green cabbage, cut into rough/coarse pieces and soaked in a saltwater brine for 24 hours (brine = 2 teaspoons salt to 2 cups of water, 1:1 ratio). The key is to keep the cabbage submerged; this keeps it crisp. After 24 hours, rinse, drain, rinse, and drain.

BASE

4 small red peppers or 2 large
8 cloves of garlic, skins removed (about one bulb)
2 tablespoons chili flakes (fresh is best—I use homemade flakes)
¼ cup fish sauce
¼ cup organic unrefined cane sugar
2 ounces ginger, skin removed
1 tablespoon salt

1. Purée all base ingredients into a paste.

2. Mix veggies and cabbage with base in a large plastic bowl. Do NOT use metal.

3. Move to a glass vessel (I found an old fishbowl for $2.00 at Goodwill that held about 2 gallons).

4. Weigh down veggies with base (I use smooth rocks in bags) until liquid rises and covers veggies.

5. Cover vessel with a towel and large rubber band to secure.

6. Let it sit on the counter for at least 5 days and up to 2 weeks (I let mine go for 3–4 weeks at 72–75 degree ambient temperature because I like a "funkier" flavored chi…at 2 weeks it was what I'd consider "right" for the general palate).